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Do Capital Markets Value Corporate Social Responsibility?

Evidence from Seasoned Equity Offerings

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Abstract

We explore whether firms' corporate social responsibility (CSR) activities provide added value to capital market participants through seasoned equity offerings (SEOs). SEOs represent cleaner exogenous activity alleviating the reverse causality issue plaguing many prior studies examining the relation between firm performance and CSR. Using a large sample of U.S. SEOs, we find high-CSR issuers experience fewer negative market reactions to SEO announcements. We also show ethical issuers have incentive to provide extensive and informative disclosures, which mitigate the degree of information asymmetry, thereby decreasing SEO underpricing. Among CSR categories, we find issuers engaging in community and environmental CSR activities and improving the rights of women and minorities are more effective at reducing SEO negative announcement returns and underpricing. Our findings remain robust after controlling for possible self-selection bias and endogeneity problems. Overall, our findings support the stakeholder value maximization view of stakeholder theory and ethical theory.

Keywords: corporate social responsibility; seasoned equity offerings; announcement returns; underpricing.
JEL Classification: G34; G12; G1.

1. Introduction

The concept of corporate social responsibility (CSR) is increasingly important in today's business climate as companies actively pursue economic growth through internationalization.[1] Over the past

[1] By January 2011, more than 60 countries and 3,000 enterprises and organizations had adopted the Global Reporting Initiative and made commitments to compile continuous development reports.

decade, many U.S. companies, from high-tech firms in Silicon Valley to Starbucks, actively invest in CSR due to pressure from stakeholders or as a strategy to maintain a competitive advantage. In Cisco's 2015 CSR report, the CEO states,

> I am proud to introduce Cisco's Corporate Social Responsibility (CSR) report, which shows in so many ways our focus on combining human and technological innovation is helping people and our planet.… In FY15 we also made solid progress on our environmental goals.

Effective use of CSR strategies can obtain activist support, achieve subconscious advertising, and help firms engage in competitive markets (Fry et al., 1982). However, in the wake of the growing importance of CSR investment, prior literature reports mixed evidence, questioning whether investing in CSR maximizes shareholder wealth or simply becomes a firm's heavy burden at the expense of shareholders. This study intends to examine the effect of these increasingly important corporate CSR activities on shareholder wealth through the announcement of seasoned equity offerings (SEOs) and provide new evidence for the ongoing debate.

We focus on SEOs for three reasons. First, SEOs are an important research topic associated with corporate financing and capital expenditure decisions and have a significant impact on shareholder wealth. Second, spending on CSR could be profitable through its brand and reputation effect (Baron 2001) and better CSR practices could help a firm build a positive image and reduce information asymmetry for various stakeholders in an SEO. Finally, SEOs represent cleaner exogenous activity that alleviates the reverse causality issue that plagues many prior studies examining the relation between firm performance and CSR. Surely, CSR corporations may command

higher value, but it can also be argued that better-valued firms are more conscious about CSR. Therefore, we use SEOs as an unexpected event to examine the effect of CSR activities on SEO announcement returns.

We measure a firm's CSR rating by examining social ratings data from KLD Research & Analytics, Inc. (KLD). KLD is a leading provider of social research data for institutional investors in the United States and evaluates U.S. companies in nearly 60 categories along six social dimensions: community activities, diversity, employee relations, environmental record, human rights, and product quality. We employ both aggregated CSR rating and negative CSR rating in our analyses to proxy for an SEO issuer's CSR practices and irresponsible CSR behaviors, respectively. We also examine the effect of individual CSR categories.

Using a large sample of U.S. seasoned common stock issues over the 20-year period from 1992 to 2012, we find a significant and positive association between three-day announcement returns and issuers' CSR ratings after controlling for the effects of year, industry, firm, and offer characteristics. Our findings suggest that the negative signal of seasoned common stock offerings is mitigated when issuers have superior CSR practices. Our results are consistent with the stakeholder value maximization perception that CSR activities have a positive effect on shareholder wealth, because the interests of shareholders and other stakeholders in high-CSR firms are more aligned than those in low-CSR firms and are more likely to contribute to a firm's long-term profitability and operation (Jensen 2001; Deng et al. 2013).

In addition, we provide evidence that engaging in more CSR activities lessens information asymmetry between SEO issuers and investors, since issuers' CSR practices are significantly and inversely associated with SEO underpricing. Thus, our finding also supports ethical theory that high-CSR firms have more incentives to be honest, trustworthy, and ethical in their business processes and are more likely to reduce information asymmetry between firm insiders and outsiders (e.g., Carroll 1979; Jones 1995; Phillips et al. 2003). In addition to the analysis using aggregate CSR scores, we further investigate the impact of individual KLD CSR (concerns) categories on SEO announcement returns and underpricing. First, our results reveal that the KLD community and environment categories have more pronounced positive impacts on SEO announcement returns than other CSR categories do, suggesting that investors will give higher valuations when issuers engage in CSR activities regarding the community and the environment. Furthermore, we find that SEO issuers who improve company diversity, such as by designating a woman or a minority as the CEO, allowing women and minorities more seats on the board of directors, or implementing innovative hiring programs for the disabled, are more capable of mitigating information asymmetry between managers and investors and further decrease SEO underpricing.

The literature with a similar objective is scant. The study that is the closest to ours is that of Chan and Walter (2014), who look into the long-term performance of a sample of environmentally friendly initial public offering (IPO) and SEO firms. Our objective, data, methodology, and findings, however, all differ from theirs. There are five key differences between Chan and Walter's study and

ours: First, we differ in sample selection. To obtain so-called green firms, Chan and Walter select firms from environmentally friendly exchange-traded funds or indices listed on the New York Stock Exchange (NYSE), American Stock Exchange, and NASDAQ, whereas we obtain our data from KLD Research & Analytics, which creates CSR ratings for the firms in the sample. Second, we differ from Chan and Walter's measurement of green. Since they select green firms from exchange-traded funds or indices, there is no measurement of the degree of "greenness." Therefore, they created a binary variable that equals one for all firms in the treatment sample and zero for firms in the control sample. Firms in the control sample are matched only with firm size. On the contrary, since we obtain data from KLD, we have a continuous measurement of CSR rankings; hence, we are able to measure the impact of different degrees of CSR. Third, our focus on performance differs from Chan and Walter's. They focus on longer-term performance differences (BHARs) between a green portfolio and a control sample, with a side touch on short-term underpricing. Our focus, on the other hand, is on the impact of CSR ranking on SEO market reactions, an event study using cumulative abnormal returns (CARs) and underpricing. As indicated, our approach mitigates the endogeneity problem that often troubles studies that investigate the relation between socially responsible investments and firm value. Fourth, our results differ from Chan and Walter's: although they also test the effect of being green on IPO and SEO underpricing, they find no relation between greenness and underpricing. Significant results are found for long-term performance only. This result raises a serious question: if the stock market is forward looking and the long-term results show a positive

effect of being green, why is the information embedded in long-term performance not incorporated in short-term performance? We tackle this question with a different sample and a different market performance design. Our results show that CSR activities do have a positive impact on SEO announcement returns and a negative relation with underpricing. Our results provide a more coherent story about CSR and stock market performance.

Finally, to further mitigate the endogeneity issue, we consider an instrumental variable regression and a Heckman self-selection model. We also conduct a battery of additional tests including the influence of the Sarbanes–Oxley Act (SOX), the effect of increasing CSR market awareness, exclusion of the post-financial crisis period, and different time sensitivity tests to ensure the robustness of our results. More importantly, we study which KLD CSR (concerns) categories have a greater impact on SEO announcement returns and underpricing.

The remainder of this study is organized as follows. The next section provides a literature review and hypothesis development. Section 3 defines the empirical models and describes the sample selection process, including sample descriptive statistics. Section 4 presents the main regression results and Section 5 the results of robustness tests using Heckman's self-selection, instrumental variable models, and other robust tests. The final section draws our conclusions.

2. Literature review and hypothesis development

Most prior literature examining the implication of security offerings has largely ignored the effects on stakeholders of SEOs. In this section, we review the literature on SEOs, discuss two arguments that relate CSR activities to security offerings, and develop our hypotheses.

2.1. SEO announcement returns and SEO underpricing

SEO announcement effects have attracted much research in the past and find average abnormal returns to be around -2% (e.g., Asquith and Mullins 1986; Masulis and Korwar 1986; Eckbo et al. 2007). The negative announcement return is mostly attributed to the adverse selection that results from asymmetric information between issuers and outside investors (Myers and Majluf 1984; Lucas and McDonald 1990). Studies examining the implications of asymmetric information on SEO announcement day returns find that 1) firms with higher information asymmetries experience larger price drops on the SEO announcement day (Dierkens 1991); 2) price drop increases in time since the firm's last earning release (Korajczyk et al. 1991); 3) the negative SEO announcement effects are more severe for firms with fewer analysts following (D'Mello and Ferris 2000); and 4) firms with a greater degree of conservatism have fewer negative SEO announcement returns (Kim et al. 2013). Moreover, in the presence of information asymmetry, managers have more motivation to overstate issuers' financial performance in equity offers and pursue personal benefits (e.g., Kim and Park 2005; Cohen and Zarowin 2010). Other studies on significant SEO discounts include the employment of aggressive earnings management (Kim and Park, 2005), a lack of analyst coverage

(Bowen et al. 2008), higher insider ownership prior to the SEO (Intintoli and Kahle 2010), and the duration of the lockup agreement (Karpoff et al. 2013). In summary, the problems identified in these studies imply that seasoned offers by firms with high levels of uncertainty and asymmetric information are more underpriced than others.

Another explanation for negative investor reactions to SEO announcements is related to the strength of issuers' corporate governance, since investors are more concerned about the possible misuse of the SEO proceeds (Jung et al. 1996). In support of this view, Kim and Purnanandam (2014) use the enactment of business combination statutes as an exogenous shock and find that the negative reactions to SEO announcements for firms located in states having passed business combination statutes are notably greater than those for firms located in states that did not pass such statutes. This result illustrates that weak corporate governance results in negative investor reactions to SEO announcements. Subsequently, Walker et al. (2016) use a sample of companies that conduct multiple SEOs and document that repeat SEO firms can build credibility through successful prior SEOs and their SEO announcements thus induce less negative market reactions. In particular, SEO firms that explain their intention for specific investments have greater abnormal announcement returns.

Several recent studies also examine the link between issuer characteristics and SEO underpricing. For instance, He et al. (2014) find that the stock liquidity of SEO firms will be lower after issuing SEOs and smaller SEO underpricing is positively associated with a greater reduction in

the transaction cost measures of illiquidity. Duca (2016) documents that post-issue stock returns are negatively associated with underpricing in a follow-on offering, implying that investors are influenced by market feedback on the investment opportunities in subsequent SEOs. Kwon et al. (2017) find that auditors' industry expertise has a negative and significant association with SEO underpricing. However, this negative relation holds only before the global financial crisis; after the crisis, the relation is not significant, suggesting that the global financial crisis impacted investor confidence of auditors' industry expertise.

2.2. CSR and stakeholder value maximization

Stakeholder theory argues that a manager should consider the interests of stakeholders in decision making because one cannot maximize a firm's value if the interest of its stakeholders is ignored (Jensen 2001). Some researchers note that CSR could be an optimal choice to minimize transaction costs and potential conflicts with stakeholders and a strategic tool for wealth creation (Garriga and Melé 2004). Therefore, in the context of stakeholder theory, CSR engagements can affect firms' financial performance. For example, studies examining the association between CSR and accounting-based performance have generally found positive results (e.g., Bowman and Haire 1975; McGuire et al. 1988). More recently, Lev et al. (2010) find that CSR-conscious firms possess superior sales and financial performance, since high-CSR firms are able to attract consumers who care about the related social issues. However, these results are often criticized, since they could suffer from a reverse causality problem.

To alleviate the reverse causality problem, some studies use stock returns to examine the relation between social responsibility and performance with mixed results. Moskowitz (1972) finds that highly ranked CSR firms realize higher stock returns. However, Vance (1975) finds that socially responsible firms exhibit lower stock performance than firms listed in the NYSE, the Dow Jones Industrials, and the Standard & Poor's (S&P) Industrials indices. In another study, Deng et al. (2013) take advantage of mergers and acquisitions as unanticipated events and find that CSR-conscious acquirers realize significantly higher CARs.

Consistent with Deng et al. (2013), we posit that CSR-conscious issuers of SEOs realize greater cumulative stock returns when announcing SEO news. This leads to our first hypothesis.

***H_1*:** The announcement return of an SEO issuer is significantly and positively associated with its CSR practices.

2.3. CSR and ethical theory

Ethical theory first emerged with Carroll (1979), who defines CSR as "the social responsibility of business that encompasses the economic, legal, ethical, and discretionary expectations that society has of organizations at a given point in time (p. 500)." Based on the principles of "the right thing to do" or "the necessity to achieve a good society (p. 60)," Garriga and Melé (2004) connect ethical value with the relation between business and society.

Grounded in ethical theory, firms or managers have an incentive to be honest and ethical and to adhere to a high standard of behavior because such behavior is beneficial to the firm (Jones 1995;

Kim et al. 2012). Ethical firms thus have incentive to provide extensive and informative disclosures. This aspect is also advocated by Gelb and Strawser (2001), who contend a positive relation between disclosure levels and CSR.

Hence, if managers engage in CSR in the context of ethical theory, we predict that they are more likely to provide more transparent financial reports, thereby alleviating information asymmetry between firm insiders and outside equity investors. Since SEO underpricing is related to information asymmetry, we expect a negative relation between the issuer's CSR practices and SEO underpricing, because the magnitude of underpricing represents the extent of information asymmetry. We propose the following hypothesis.

***H_2*:** SEO underpricing is negatively associated with the issuer's CSR practices.

2.4. Effect of information asymmetry

McWilliams and Siegel (2001) contend that CSR-active firms always attract media attention due to the mass demands of consumers; journalists therefore often provide free publicity for firms committing to CSR. This free publicity offers the public more access to new information with regard to the firm's industry attributes and methods of production and thus facilitates greater public awareness of CSR and reduces information asymmetry. Cho et al. (2013) document a negative association between CSR practices and information asymmetry. They show that informed investors can utilize the firm's CSR information advantage to reduce information asymmetry with insiders.

Overall, Cho et al. propose the use of CSR as a regulatory action to alleviate the adverse selection problem for those uninformed investors.

Because the magnitude of SEO underpricing can be attributed to the degree of asymmetric information between issuers and outside investors, we predict a weaker information asymmetry effect on SEO underpricing when SEO issuers have stronger CSR practices. Thus, we provide the following hypothesis.

***H_3*:** CSR practices reduce the effect of information asymmetry on SEO underpricing.

3. Data and methodology

3.1. Data

Table 1 presents the sample characteristics. Our initial sample consists of all observations for SEOs in the SDC Global New Issues database from 1992 to 2012. Following Kim et al. (2013), we exclude private placement, unit offers, right offers, and unit investment trust offers and match all SEOs with the KLD database to obtain the initial 4,043 firm–year observations. After deleting observations with missing stock prices from the Center for Research in Security Prices (CRSP), financial data from Compustat, and missing control variables data from the SDC database, the sample consists of 1,076 firm–year offerings.

Since prior studies indicate that utilities firms have different characteristics (Asquith and Mullins 1986; Masulis and Korwar 1986), we exclude utilities firms as defined by Fama and French (1997). Finally, we also delete offers with an offering price of less than $5 to exclude extreme

outliers, as Kim et al. (2013). This screening process retains 934 firm–year observations for the SEO announcement return analysis. Unlike the calculation of SEO abnormal returns, which requires an estimation period, the sample size for the SEO underpricing analysis is larger: 1770 firm–year observations.

Panel A of Table 1 shows that the number of offers is larger after 2003.[2] Panel B shows the industry composition of the sample and the most heavily represented industry is trading firms, followed by business services and petroleum and natural gas. Similarly, as can be seen in Panel B, the market model cumulative returns for the SEO are mostly negative and possess similar magnitudes among all industries except the beer industry.

3.2. SEO announcement returns and CSR

Based on Masulis and Korwar (1986), Shivakumar (2000), and Kim et al. (2013), we establish the following $SEOCAR_{it}$ model to examine H1:

$$SEOCAR_{it} = \beta_0 + \beta_1 CSR_{it} \text{ (or } Concern_{it}) + \beta_2 Size_{it-1} + \beta_3 Leverage_{it-1} + \beta_4 Mtb_{it-1} + \beta_5 Relative\_offer_{it} + \beta_6 Secondary\_shares_{it} + \beta_7 Underwriter\_ranking_{it-1} + \beta_8 Nasdaq_{it} + \beta_9 Mktrunup_{it} + \beta_{10} Runup_{it} + Year + Industry + \varepsilon_{it} \quad (1)$$

All variable definitions are presented in the Appendix. The variables of primary interest are $SEOCAR_{it}$, the CAR of SEO-announcing firms; *CSR* score; and *Concern* score (aggregate KLD concerns score). Prior studies find that 90% of publicly traded firms make their SEO announcements

[2] The number of our sample firms significantly increases after 2003 because KLD expanded its coverage of public firms in the United States.

on the filing dates (e.g., Jegadeesh et al. 1993). We thus define the dependent variable $SEOCAR_{it}$ as the three-day cumulative abnormal stock returns around the filing date. Following Chang et al. (2007), we calculate $SEOCAR_{it}$ based upon the difference between the actual return and the expected return, where the expected return is estimated for the event window (-260, -11) prior to the SEO announcement for each firm *i*, using the following market model:

$$SEOCAR_{it} = \sum_{t_1}^{t_2} (R_{it} - \hat{\alpha} - \hat{\beta} \cdot R_{mt}) \quad (2)$$

where R_{it} is the stock return of firm *i* on day *t*, $\hat{\alpha}$ is the intercept, $\hat{\beta}$ is the coefficient of the market return, and R_{mt} is the daily return of the equally weighted CRSP market portfolio. In the market model, we regress stock *i*'s daily return R_{it} on the daily return of the market portfolio R_{mt} during an estimation window (-260, -11) to acquire the estimators of $\hat{\alpha}$ and $\hat{\beta}$. The independent variable CSR_{it} is the aggregate KLD score for firm *i* in year *t*, which equals the total number of strengths minus the total number of concerns, while $Concern_{it}$ is the KLD concerns score for firm *i* in year *t*, which is the total number of concerns.

Since firm size and leverage are important determinants of SEO announcement returns, $Size_{it-1}$ and $Leverage_{it-1}$ denote firm size and leverage ratio (Eckbo et al. 2007), respectively. The market-to-book ratio, Mtb_{it-1}, is used to control for the issuer's future growth. Since Masulis and Korwar (1986) indicate that individual stock returns and market returns influence ex ante market assessments for firms providing common stock offerings, we include $Runup_{it}$ and $Mktrunup_{it}$ to control for pre-announcement individual stock returns and market returns, respectively. We include

the number of shares offered scaled by total shares outstanding ($Relative\_offer_{it}$), since a smaller offering size is expected to be associated with higher stock returns (Shivakumar 2000). As Kim et al. (2013), we also control for the percentage of SEO shares sold by extant shareholders divided by total SEO-offered shares ($Secondary\_shares_{it}$) and underwriter reputation ($Underwriter\_ranking_{it-1}$). We add a dummy variable set to one for issuers listed on the NASDAQ ($Nasdaq_{it}$) to control for different issuer risks and characteristics. Finally, for all the models examined in this paper, we control for year and industry fixed effects and winsorize all the variables at the first and 99th percentiles.[3] All standard errors are clustered at the firm level.

3.3. SEO underpricing and CSR

Next, we test whether a SEO firm's engagement in CSR activities can significantly influence its underpricing. We define underpricing as the return computed from the closing price on the offer dates divided by the offer price. However, the offer dates may be inappropriate, because around 20% of the offers take place after the close of trading (Eckbo and Masulis 1992). We mitigate this difficulty by capitalizing the volume-corrected offer date based on the works of Safieddine and Wilhelm (1996), Corwin (2003), Kim and Park (2005), and Bowen et al. (2008). If the trading volume on the day following the SDC offer date is more than twice the trading volume on the SDC offer date and more than twice the average daily volume of the prior 250 trading days, then the date following the SDC offer date is set as the offer date.

[3] The industry types are classified by the 48 industries of Fama and French (1997).

Following Corwin (2003) and Kim and Park (2005), we employ the following regression model to explore the association between CSR ratings and SEO underpricing:

$$\begin{aligned} SEO\ Underpricing_{it} = {} & \beta_0 + \beta_1 CSR_{it}\,(\text{or, } Concern_{it}) + \beta_2 PreCAR_{it} + \beta_3 Lnage_{it} \\ & + \beta_4 Relative\_offer_{it} + \beta_5 Relative\_offer_{it} \times D_{LowMV} \\ & + \beta_6 Relative\_offer_{it} \times D_{HighRisk} + \beta_7 Relative\_offer_{it} \\ & \times D_{LowPrice} + \beta_8 Volatility_{it} + \beta_9 Lnprice_{it} + \beta_{10} Tick_{it} \\ & + \beta_{11} Lnprice_{it} \times Tick_{it} + \beta_{12}\, IPO\_underpricing_{it} + \beta_{13} Nasdaq_{it} \\ & + Year + Industry + \varepsilon_{it} \end{aligned} \quad (3)$$

Again, detailed definitions of the variables are listed in the Appendix. Since previous studies document that higher pre-offer abnormal stock returns are positively related to SEO underpricing (Benveniste and Spindt 1989; Loughran and Ritter 2002), we include the cumulative market-adjusted return between the filing date and the day prior to the offer ($PreCAR_{it}$) to capture the impact of pre-offer price movement. We also include the relative offer size ($Relative\_offer_{it}$) to control for the market's ability to absorb new shares. We control for inelastic demand for securities using three dummy variables that equal to one if firms are classified as small firms (D_{LowMV}), high-risk firms ($D_{HighRisk}$), or low-priced stocks ($D_{LowPrice}$), respectively (Mikkelson and Partch 1985; Corwin 2003; Kim and Park 2005).

Moreover, we include the pre-offer day price ($Lnprice_{it}$), as Corwin (2003). We also include $Volatility_{it}$, a proxy of price uncertainty and asymmetric information, as a control variable in the SEO

underpricing regressions. Several papers suggest that the increase of IPO underpricing contemporarily accompanies the increase of SEO underpricing (Loughran and Ritter 2002; Ritter and Welch 2002); we utilize $IPO\_underpricing_{it}$ to control for this effect. Lastly, following Kim and Park (2005), we include the dummy variables $Tick_{it}$ and $Nasdaq_{it}$ to control for the presence of offer price rounding and firm characteristics, respectively.[4]

To examine whether CSR reduces the effect of information asymmetry on SEO underpricing, we use the following regression models, including the CSR scores, the concerns scores, and their interaction with the proxy of information asymmetry to test H3:

$$\begin{aligned} SEO\ Underpricing_{it} = {} & \beta_0 + \beta_1 CSR_{it}\,(\text{or, } Concern_{it}) + \beta_2 CSR_{it}\,(\text{or, } Concern_{it}) \\ & \times InfoAsm_{it} + \beta_3 PreCAR_{it} + \beta_4 Lnage_{it} + \beta_5 Relative\_offer_{it} \\ & + \beta_6 Relative\_offer_{it} \times D_{LowMV} + \beta_7 Relative\_offer_{it} \times D_{HighRisk} \\ & + \beta_8 Relative\_offer_{it} \times D_{LowPrice} + \beta_9\, Volatility_{it} + \beta_{10}\, Lnprice_{it} \\ & + \beta_{11} Tick_{it} + \beta_{12} Lnprice_{it} \times Tick_{it} + \beta_{13}\, IPO\_underpricing_{it} \\ & + \beta_{14} Nasdaq_{it} + Year + Industry + \varepsilon_{it} \end{aligned} \quad (4)$$

In reality, information asymmetry represents the extent to which managers have value-relevant and firm-specific information not released to the market (Krishnaswami and Subramaniam 1999). The theoretical literature indicates that a high level of information asymmetry between managers and outside investors can lead to greater heterogeneity of investor beliefs and higher stock return

[4] Mola and Loughran (2004) find that seasoned offer prices are clustered around integers and Corwin (2003) notes that these rounded prices could reflect the underwriter's desire to reduce the costs of negotiating the offer price and the stock value uncertainty.

volatility (Verrecchia 1983; Shin 2003). Jiang et al. (2009) support this perspective and examine the relation between idiosyncratic volatility and the information content of future earnings and find a significant association between idiosyncratic volatility and corporate information disclosure. Therefore, following the definition of information asymmetry in previous studies (Bhagat et al. 1985; Blackwell et al. 1990; Dierkens 1991; Krishnaswami and Subramaniam 1999; Jiang et al. 2009), we employ the residual volatility in daily stock return as our proxy of information asymmetry and denote $InfoAsm_{it}$ as the standard deviation of the residuals of the market model regression using daily returns.

3.4. Descriptive statistics

Panel A of Table 2 provides descriptive statistics of the dependent variable and explanatory variables of the $SEOCAR_{it}$ model (Equation (1)). In Equation (1), the mean of $SEOCAR_{it}$ (-0.014) is in line with the SEO announcement returns documented by prior studies and is also very close to the mean (-0.017) reported by Kim et al. (2013). The mean values of CSR_{it} and $Concern_{it}$ are -1.510 and 3.096, respectively. On average, SEO companies have lower CSR performance compared with those in prior CSR studies. For example, in their earnings quality study, Kim et al. (2012) report an aggregate KLD score of -0.055, while Hoi et al. (2013) show a mean value of 1.9219 for the aggregate KLD concerns score in their tax avoidance study. The mean values of $Size_{it-1}$, $Leverage_{it-1}$, Mtb_{it-1}, $Relative\_offer_{it}$, and $Secondary\_shares_{it}$ are 20.993, 0.289, 6.784, 0.146, and 0.285, respectively. The average values of $Mktrunup_{it}$ and $Runup_{it}$ are 0.018 and 0.087, respectively, which

are generally consistent with the positive pre-announcement stock returns reported by Kim et al. (2013).

Panel B of Table 2 provides summary statistics of the variables in the SEO underpricing model (Equation (3)). The average and median values for *SEO Underpricing*$_{it}$ are 0.119 and 0.022, respectively, while the mean values of *CSR*$_{it}$ and *Concern*$_{it}$ are -1.046 and 3.053, respectively, suggesting that, on average, the SEO issuer sample has low CSR performance and about three irresponsible CSR activities per year. In addition, the mean (median) values of *PreCAR*$_{it}$, *Lnage*$_{it}$, *Relative_offer*$_{it}$, *Volatility*$_{it}$, *Lnprice*$_{it}$ and *Tick*$_{it}$ are 0.083 (0.000), 2.195 (2.195), 0.150 (0.101), 1.121 (0.768), 3.077 (3.129), and 0.265 (0.000), respectively, showing reasonable variations relative to prior studies (e.g., Corwin 2003; Kim and Park 2005). Finally, the sample mean value of *IPO_underpricing*$_{it}$ (0.135) is a little less than but consistent with the value (0.266) reported by Kim and Park (2005).

Table 3 reports the Pearson pairwise correlations between all variables. The bivariate correlations show that the cumulative adjusted returns are significantly associated with some of the test variables and most of the control variables. Specifically, firms with better CSR practices are found to enjoy higher CARs and *SEOCAR*$_{it}$ is significantly and negatively related to *Secondary_shares*$_{it}$, *Runup*$_{it}$, and *Mktrunup*$_{it}$. The correlation matrix also shows that *SEOCAR*$_{it}$ is positively associated with *Size*$_{it-1}$ and most of the correlation coefficients between explanatory variables are smaller than 20%, suggesting that multicollinearity is not a significant problem in our

regression models. To be sure, we also examine the variance inflation factor (VIF) statistics for all models and find that multicollinearity is not a concern.

4. Empirical results

4.1. SEO announcement returns

Table 4 reports the results for ordinary least squares (OLS) *SEOCAR* regressions on the firm's *CSR* practices. Standard errors in all regressions are clustered at the firm and year levels. Our OLS models produce higher adjusted *R*-squared values compared with those reported in prior studies of SEO announcement returns (e.g., Shivakumar 2000; Kim et al. 2013). Column (1) in Table 4 presents the results without controlling for SEO attributes. The coefficient of CSR_{it} is positive and significant ($p < 0.05$), suggesting that highly CSR-conscious issuers have significantly higher announcement returns than issuers with a bad CSR rating. On the contrary, we find that the coefficient of the KLD concerns score, $Concern_{it}$, is negatively and significantly associated with $SEOCAR_{it}$ in Column (2) ($p < 0.05$). In the third and fourth columns, after controlling for various issuer characteristics, we find the same positive and significant coefficient for CSR_{it} ($p < 0.05$) and a stronger negative relation between $Concern_{it}$ and $SEOCAR_{it}$ ($p < 0.01$). Thus, we can conclude that high-CSR SEO issuers realize higher announcement returns. Overall, our results support H1 and agree with the perceptions of stakeholder value maximization theory.[5]

[5] We also consider whether a firm's CSR practices in the year before the SEO announcement could influence CARs ($SEOCAR_{it}$). We find consistent results while regressing lagged CSR and concerns on $SEOCAR_{it}$. The use of lagged CSR enables us to alleviate the omitted variable problem.

4.2. SEO underpricing

Table 5 provides results from the SEO underpricing regressions, where the dependent variable is the SEO underpricing. In Column (1), the coefficient of CSR_{it} is negative and significant ($p < 0.10$), indicating that issuers with good CSR practices indeed reduce SEO underpricing, probably through a reduction in investors' information uncertainty. As shown in Column (2), though carrying the correct sign, *Concern* (negative CSR activities) is not statistically significant.

Our regression analysis also includes $Relative\_offer_{it} \times D_{LowMV}$, $Relative\_offer_{it} \times D_{HighRisk}$, and $Relative\_offer_{it} \times D_{LowPrice}$, because Corwin (2003) suggests a larger offer size impact for securities with inelastic demand. The third and fourth columns in Table 5 report these results. As can be seen, CSR_{it} remains significant with virtually no change in the coefficient magnitude. The adjusted R-squared values average 88.5%.

4.3. Impact of information asymmetry

Since we attribute the negative relation between CSR and SEO underpricing to information asymmetry, in this section, we further examine the role of information asymmetry. As discussed in H2, the magnitudes of underpricing could reflect information asymmetry; hence, the SEO is more underpriced for firms with greater information asymmetry (Rock 1986; Ritter and Welch 2002; Altinkilic and Hansen 2003). In Table 6, we report the results by including the interaction variable $CSR_{it} \times InfoAsm_{it}$ to examine the effect of information asymmetry on the relation between CSR and SEO underpricing. We posit that the ability of CSR performance to reduce SEO underpricing is

greater for firms with greater information asymmetry. Two findings are relevant: First, the result continues to exhibit significant and negative coefficients for CSR_{it} ($p < 0.10$), as shown in Column (1). Second, the coefficients of the interaction term are also negative and statistically significant ($p < 0.10$), suggesting that the ability of CSR performance to reduce SEO underpricing is greater for firms with higher information asymmetry. This result continues to hold in the third column after controlling for the impact of the issuer's relative offer size. This result supports H3.

4.4. Which KLD categories matter the most

Since KLD scores are derived from different categories, it would be interesting to assess which KLD CSR (concerns) categories have the greatest impacts on SEO announcement returns and underpricing. To this end, we decompose the aggregate KLD CSR (concerns) score into seven categories: corporate governance ($CGOV_{it}$), community (COM_{it}), diversity (DIV_{it}), employee relations (EMP_{it}), the environment (ENV_{it}), human rights (HUM_{it}), and products (PRO_{it}) and report the results in Table 7.

Panel A of Table 7 shows the regression results of the effect of individual KLD CSR (concerns) category scores on the SEO announcement returns. Specifically, in the upper part of Panel A, the coefficient of the KLD community category (COM_{it}) shows the greatest positive impact on SEO announcement returns ($t = 3.12$ and $p < 0.01$), followed by the coefficient of the KLD environment (ENV_{it}) category ($p < 0.05$). This implies that investors give a higher valuation when SEO issuers

engage in CSR practices that benefit the community and the environment.[6] The lower part of Panel A reports the results of concerns and shows consistent results, as reported in the upper part of the panel. The coefficients of the KLD community concern (COM_CON_{it}) and environment concern (ENV_CON_{it}) categories are negative and significant at the 1% and 10% levels, respectively. Moreover, issuers engaging in detrimental activities in employee relations (EMP_CON_{it}) also have negative valuations ($p < 0.01$). In sum, SEO issuers engaging in CSR community and environment activities receive higher valuations. On the other hand, SEO issuers engaging in detrimental employee relations activities garner significant and negative market reactions.

The relative contribution of each KLD CSR (concerns) category to SEO underpricing is reported in Panel B of Table 7. The upper part of Panel B shows that the coefficient of KLD Diversity (DIV_{it}) score is negative and significant ($p < 0.01$), suggesting a stronger *DIV* score reduces SEO underpricing. In addition, the lower part of Panel B presents results consistent with the upper part of Panel B. The coefficient of KLD diversity concerns (DIV_CON_{it}) displays the opposite sign at the same significance level ($p < 0.01$).

We also examine the results of information asymmetry based upon KLD CSR (concerns) categories; however, to save the space, we do not tabulate the results here. The coefficient of the interaction term $DIV_{it} \times InfoAsm_{it}$ (or $DIV\_CON_{it} \times InfoAsm_{it}$) has the greatest positive (negative)

[6] It may be somewhat surprising that $CGOV_{it}$ is not statistically significant, although it does carry a positive sign (*t*-statistics = 1.59). KLD's definition of $CGOV_{it}$, however, includes items that differ from traditional measurements of corporate governance and are as follows: 1) The company has recently awarded low levels of compensation to its top management, 2) the company owns 20–50% of another company KLD has cited as having social strength, 3) the company is effective in reporting social and environmental performance measures, 4) the company has shown responsible leadership in public policy issues, and 5) the company has a unique and positive corporate culture.

impact on SEO underpricing and is statistically significant (both $p < 0.05$), suggesting that SEO issuers that improve company diversity significantly reduce information asymmetry between insiders and outside investors and decrease SEO underpricing. Although the results presented in Table 7 favor (disfavor) some CSR categories, one should be cautioned not to jump to the conclusion that the insignificant categories do not contribute to market perception of CSR. Investors could view social responsibility as a joint distribution of all the categories, thus making it difficult to assess the individual contributions.

4.5. Effect of SOX

Cohen and Zarowin (2010) find that SEO firms have reduced accrual management in favor of real earnings management activities since the passage of SOX in 2002, because the former is less likely to be scrutinized by auditors and regulators. Therefore, we expect CSR to be more important since the passage of SOX. To examine such an effect, we divide our sample into pre-SOX and post-SOX periods and repeat our analyses.

Supporting our expectation, the results in Table 8 show that the coefficient of CSR_{it} is positive and significant for $SEOCAR_{it}$ ($p < 0.05$) and the coefficient of $Concern_{it}$ is negative and significant for $SEOCAR_{it}$ ($p < 0.01$) during the post-SOX period. However, none of the relations is significant during the pre-SOX period. Moreover, in Table 9, the coefficients of CSR_{it} and $Concern_{it}$ for SEO underpricing have results similar to those reported in Table 8. Overall, our results demonstrate that

capital markets have increased concerns about firms' CSR implementations since the passage of SOX.

4.6 Effect of increasing market awareness

CSR activities have become increasingly popular among U.S. companies (Nan and Heo 2007). This raises the question whether U.S. companies engaging CSR activities have become more common so that the effect of CSR on SEO announcement returns or underpricing has become more (or less) effective in later years. It can be less effective if we assume a declining marginal impact; on the contrary, the effect could be higher in later years because the investment community has become increasingly aware of the importance of CSR activities, which were previously ignored. To answer this question, we consider the effect of the time element, *Time*, in the regression model. The variable *Time* is defined as a continuous variable equal to one for the first sample year and 21 for the latest year of the sample.

Table 10 reports the time dependence regression results of CSR (concerns) score on $SEOCAR_{it}$ and SEO underpricing. Column (1) (column (2)) of Panel A shows that CSR_{it}×*Time* ($Concern_{it}$×*Time*) is positively (negatively) related to $SEOCAR_{it}$ (both $p < 0.1$). Though still significant, the effect is a little weaker compared with the results in Table 4. This is probably due to the multicollinearity problem when both CSR_{it} and CSR_{it}×*Time* ($Concern_{it}$ and $Concern_{it}$×*Time*) appear in the regression model.[7] To mitigate the multicollinearity problem, we thus remove the

[7] We examine the VIF statistics for CSR_{it} and CSR_{it}×*Time* and for $Concern_{it}$ and $Concern_{it}$×*Time* in the regressions of columns (1) and (2), both showing that the VIF value is greater than 10.

variables CSR_{it} and $Concern_{it}$ from the regressions of columns (3) and (4) in Panel A of Table 10, respectively. Not surprisingly, the coefficient of CSR_{it}×*Time* becomes positive and significant at the 5% level and the coefficient of $Concern_{it}$×*Time* is negative and significant at the 1% level, consistent with the results reported in Table 4.[8] Panel B reports the results of SEO underpricing. There is weak evidence that CSR activities are more likely to reduce SEO underpricing in later years. These results together suggest that, as the market becomes more aware of CSR activities, the importance of being socially responsible has increased.

5. Robustness tests

5.1. Heckman self-selection model

Since we recognize that CSR activities could be self-selected by firms, our analysis could contain self-selection bias. For example, higher-quality firms could self-select to engage in CSR. To address possible self-selection bias, we use the two-stage approach proposed by Heckman (1979) to re-evaluate the results. In the first stage, we follow Hoi et al. (2013) and construct a probit regression model to select CSR activities. We run the regression models using a high negative CSR score ($High\_Neg\_CSR_{it}$) as the dependent variable, where $High\_Neg\_CSR_{it}$ = 1 for firms with a negative CSR score and $High\_Neg\_CSR_{it}$ = 0 otherwise. The inverse Mills ratios obtained from the first-stage regression models are then included in the $SEOCAR_{it}$ and SEO underpricing models to run the second-stage regressions. The first-stage probit model is specified as follows:

[8] This type of regression has been used in the literature. This specification implies that the marginal impact of CSR on CAR depends on time without the intercept term.

$$High\_Neg\_CSR_{it} = \beta_0 + \beta_1 Blue_{it} + \beta_2 Vol_{it} + \beta_3 Roa_{it} + \beta_4\, Institutional\_holdings_{it} + \beta_5 Turnover_{it} + \beta_6\, Lnage_{it} + \beta_7\, Size_{it-1} + \beta_8\, Leverage_{it-1} + \beta_9 Mtb_{it-1} + Year + Industry + \varepsilon \quad (5)$$

where the variables are defined in the Appendix. Rubin (2008) finds that firms located in states that voted predominantly Democratic, or blue states, are less likely to exhibit irresponsible CSR behaviors; thus, we use the indicator variable $Blue_{it}$ to control for external political preferences. Following Kim et al. (2012) and Hoi et al. (2013), we include proxies for firm size ($Size_{it-1}$), firm profit (Roa_{it}), the turnover ratio ($Turnover_{it}$), and the market-to-book ratio (Mtb_{it-1}) in the probit model. We control for the percentage of institutional holdings ($Institutional\_holdings_{it}$), since Johnson and Greening (1999) suggest that institutional investors are more in favor of firms engaging in CSR. Similarly, as older firms and firms in better financial condition are more likely to invest in CSR, we include firm age ($Lnage_{it}$) and leverage ratio ($Leverage_{it-1}$) in the regression. Finally, we also control for firm risk (Vol_{it}), as Gao et al. (2014).

To save space, the first-stage Heckman regression results are not tabulated. The second-stage regression results for $SEOCAR_{it}$ are reported in Table 11. We find that the coefficient estimates for CSR_{it} and $Concern_{it}$ are essentially unchanged from the previous results, showing that our findings are robust after correcting for potential self-selection bias.

Similarly, in Table 12, the Heckman model obtains SEO underpricing results similar to those in Table 5. Lastly, we examine the effect of interaction between the CSR score and information

asymmetry on SEO underpricing and find that the coefficient of $CSR_{it} \times InfoAsm_{it}$ is still negative and significant ($p < 0.1$), consistent with the results of Table 6. Overall, the results indicate that SEO underpricing is reduced for issuers with good CSR practices and more transparent information. Thus, the findings in the Tables 11 and 12 that take self-selection bias into account reinforce the finding in Tables 4 to 6.

5.2. Endogeneity: Instrumental variables

Since CSR could potentially be endogenous, to mitigate endogeneity problems, we use two-stage least squares (2SLS) instrumental variable regressions in which the mean CSR_{it} ($Concern_{it}$) score for all firms located in the same state ($State\_CSR_{it}$/$State\_Concern_{it}$) and the mean CSR_{it} score for all firms with the same two-digit Standard Industrial Classification (SIC) codes ($Industry\_CSR_{it}$/$Industry\_Concern_{it}$) are the instrumental variables. As Chang et al. (2014) discussed, the mean CSR_{it} score for all firms in one state or in the same industry should affect the CSR_{it} score but would not affect an individual firm's SEO announcement returns or SEO underpricing. Hence, $State\_CSR_{it}$ and $Industry\_CSR_{it}$ are valid instrumental variables. Firm level control variables are also included in the first stage estimation.

We report the results from the 2SLS instrumental variable regressions in Tables 13 and 14 for $SEOCAR_{it}$ and $SEO\ underpricing_{it}$, respectively. In the first-stage instrumental variables regressions, all the coefficients of the instrumental variables are positive and significant ($p < 0.01$), showing the instruments are unlikely to be weak. The third and fourth columns of Tables 13 and 14 show the

results of second-stage instrumental variable regressions. We find that the coefficient estimates of $Instrument\_CSR_{it}$ ($Instrument\_Concern_{it}$) are again positive (negative) and significant ($p < 0.01$), as shown in Table 13. In Table 14, the predicted variable for $Instrument\_CSR_{it}$ also has a negative and significant coefficient for SEO underpricing ($p < 0.1$) and the coefficient of $Instrument\_CSR_{it} \times InfoAsm_{it}$ still remains negative and significant ($p < 0.1$). Thus, after controlling for endogeneity bias, we find that none of the above findings for SEO announcement returns and SEO underpricing is spurious.

5.3. Excluding the year 2009

Among all years, 2009 has the largest number of SEO offerings, 138. We do not know the exact reasons for the unusually large number of SEOs in 2009, but we speculate it could be due to the market optimism after the 2008 crash. The stock market bottomed out in March 2009; the S&P 500 index registered a low of 683.38 points on March 2, 2009. However, the speed of stock market recovery was dramatic in the following several months. By December 30, 2009, the S&P 500 index stood at 1,126.42, a whopping 65% recovery. Therefore, the stock markets might have become optimistic about market recovery and prompted many to issue SEOs.

To show that our conclusions are not driven by the unusual situation in 2009, we reexamine our results by excluding 2009, which has the largest number of equity offers. First, we find that the coefficient of CSR_{it} is positive and significant ($p < 0.05$); moreover, the coefficient of $Concern_{it}$ is negative and significant ($p < 0.05$), consistent with the results reported in Table 4. Next, the

coefficient of CSR_{it} for SEO underpricing after excluding 2009 is even more negative ($p < 0.05$) in contrast to the CSR_{it} coefficients in Table 6 and the coefficient of the interaction variable $CSR_{it} \times InfoAsm_{it}$ remains at the same statistical significance level ($p < 0.1$). These results are not tabulated for brevity.

5.4. Treatment of methodology changes at the end of 2011

In 2010, the KLD database was purchased by MSCI and MSCI introduced significant changes to the estimation of KLD scores by the end of 2011.[9] Hence, to ensure the validity of our results, we retest our three hypotheses by excluding the years 2011 and 2012.[10] For the whole sample from 1992 to 2010, the CSR variable still carries a positive sign for the $SEOCAR_{it}$ model, albeit with weaker statistical significance, while the concerns variable continues to be negative and significant. The results for the SEO underpricing model show stronger significance for the coefficients of CSR_{it} and $CSR_{it} \times InfoAsm_{it}$ compared to the results in Table 6 (both $p < 0.05$).

Since there was a lack of awareness about CSR before 2001 (4.8% of the total sample),[11] we repeat the CSR effect test excluding 2011, 2012, and the years before 2001.[12] The results are consistent with previous findings; that is, the effects of both CSR_{it} and $Concern_{it}$ on $SEOCAR_{it}$

[9] The industry-based key issue ratings model was introduced to the MSCI environmental, social, and governance (ESG) KLD database in 2010, which focuses only on issues that are determined material to each industry. Before 2010, all ESG performance indicators were researched for all the companies in the coverage universe.

[10] For brevity, we do not tabulate the regression results of $SEOCAR_{it}$ and $SEO\ underpricing_{it}$ for the KLD CSR (concerns) score after excluding 2011 and 2012.

[11] The MSCI ESG KLD data sets consist of six data sets that include around 7,750 companies from 1991 to 2014; however only one data set contains the ESG KLD ratings before 2001, which cover 650 companies. Hence, we use the sample period from 2001 to 2010 to reexamine our three hypotheses, since this sample period has a consistent estimated method and a more complete sample size.

[12] For brevity, we do not tabulate the results, but they are available upon request.

remain statistically significant at the 10% and 1% levels, respectively. Moreover, $CSR_{it} \times InfoAsm_{it}$ exhibits a negative and significant coefficient in the SEO underpricing regression ($p < 0.05$). Therefore, the changes in methodology do not seem to have a material impact on our results.

6. Summary and conclusions

This study examines whether firms' CSR activities provide value to capital market participants through SEO events. We find a significant and positive association between CSR and SEO announcement returns, consistent with the stakeholder value maximization explanation. In addition, we also examine the relations among CSR engagements, information asymmetry, and SEO pricing. Our results show a negative relation between CSR and SEO underpricing; this relation is stronger for firms with higher information asymmetry. Our results thus suggest high-CSR issuers provide value to their shareholders through reducing information asymmetry between firm insiders and outside investors. We further investigate the relative contribution of each KLD CSR (concerns) category to SEO announcement returns and underpricing. We find that SEO issuers engaging in community and environment activities are more likely to lessen negative SEO announcement returns than those engaging in other CSR activities. Interestingly, there is evidence that the effect of CSR has grown stronger in recent years, suggesting investors have become more aware of the importance of CSR activities. Our results are robust to the possibility of self-selection bias and the endogeneity problem. Heckman's self-selection model and an instrumental variable model show that our results remain the same.

Collectively, we provide robust results to support the stakeholder value maximization and ethical theory views. We contribute to the literature by suggesting that CSR can be a tool to achieve economic objectives and ultimately create shareholder wealth.

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Table 11

+ H F N P D Q ¶ V Stage Results of CARs (-1, 1) on the CSR Scores

	SEOCAR$_{it}$			
	Second-Stage Regression	***Second-Stage Regression***	***Second-Stage Regression***	***Second-Stage Regression***
Dependent Variable	**(1)**	**(2)**	**(3)**	**(4)**
CSR$_{it}$	0.0011**		0.0010**	
	2.31		2.08	
Concern$_{it}$		-0.0015**		-0.0016**
		-2.49		-2.55
Size$_{it-1}$	-0.0005	0.0008	-0.0002	0.0012
	-0.24	0.39	-0.09	0.56
Leverage$_{it-1}$	0.0048	0.0028	0.0015	-0.0003
	0.70	0.41	0.21	-0.05
Mtb$_{it-1}$	-0.0002	-0.0001	-0.0002**	-0.0002*
	-1.38	-1.19	-2.02	-1.86
Relative_offer$_{it}$			-0.0209*	-0.0203*
			-1.90	-1.85
Secondary_shares$_{it}$			-0.0157***	-0.0166***
			-3.67	-3.90
Underwriter_ranking$_{it-1}$			0.0092**	0.0090**
			2.37	2.32
Nasdaq$_{it}$	0.0020	0.0022	0.0016	0.0018
	0.44	0.50	0.37	0.40
Mktrunup$_{it}$	0.0435	0.0428	0.0481*	0.0484*
	1.64	1.61	1.82	1.83
Runup$_{it}$	-0.0614***	-0.0622***	-0.0632***	-0.0642***
	-8.46	-8.55	-8.76	-8.89
Inverse Mills ratio$_{it}$	-0.0046	-0.0039	0.0036	0.0044
	-0.42	-0.36	0.33	0.40
Intercept	0.0697	0.0435	0.0553	0.0285
	1.11	0.69	0.88	0.46
Year effect	Yes	Yes	Yes	Yes
Industry effect	Yes	Yes	Yes	Yes
N	934	934	934	934
Adjusted R^2	12.5%	12.6%	14.3%	14.5%

Note: This table reports the regression results based on a Heckman (1979) selection model and regressing the dependent variable *SEOCAR$_{it}$* on KLD CSR and KLD concerns scores from 1992 to 2012. The variable *SEOCAR$_{it}$* is the cumulative abnormal stock return in the three-day window (-1, 0, 1) around the SEO announcement for firm *i* in year *t* based on the OLS market model with the estimation window of (-260, -11). The other variables are defined as in the Appendix. ***, **, and * indicate significance at the 1%, 5%, and 10% levels based on *t*-statistics, respectively.

Table 12

+HFNPDQ¶V 6HFRQG 6WDJH 5HVXOWV RI 6(2 8(

Information Asymmetry

	SEO Underpricing$_{it}$			
Dependent Variable	***Second Stage Regression***	***Second Stage Regression***	***Second Stage Regression***	***Second Stage Regression***
CSR_{it}	-0.00185*		-0.0019*	
	-1.76		-1.79	
$Concern_{it}$		0.0002		0.0002
		0.10		0.09
$CSR_{it} \times InfoAsm_{it}$	-0.0828*		-0.0859*	
	-1.85		-1.90	
$Concern_{it} \times InfoAsm_{it}$		0.0113		0.0129
		0.26		0.29
$PreCAR_{it}$	0.9911***	0.9912***	0.9910***	0.9911***
	113.98	113.22	113.87	113.11
$Lnage_{it}$	0.0184***	0.0176***	0.0184***	0.0176***
	4.07	3.90	4.07	3.90
$Relative\_offer_{it}$	-0.0267	-0.0268	-0.0094	-0.0244
	-1.37	-1.37	-0.20	-0.51
$Relative\_offer_{it} \times D_{LowMV}$			-0.0214	-0.0060
			-0.32	0.02
$Relative\_offer_{it} \times D_{HighRisk}$			-0.0399	-0.0320
			-0.89	-0.72
$Relative\_offer_{it} \times D_{LowPrice}$			0.0247	0.0317
			0.40	0.50
$Volatility_{it}$	-0.0098**	-0.0102***	-0.0086**	-0.0092**
	-2.54	-2.64	-2.03	-2.18
$Lnprice_{it}$	-0.0012	-0.0015	-0.0022	-0.0025
	-0.15	-0.19	-0.27	-0.30
$Tick_{it}$	-0.0029	-0.0027	-0.0028	-0.0027
	-0.35	-0.32	-0.33	-0.32
$Lnprice_{it} \times Tick_{it}$	-0.0299**	-0.0295**	-0.0301**	-0.0295**
	-2.51	-2.46	-2.51	-2.46
$IPO\_underpricing_{it}$	-0.0373	-0.0346	-0.0384	-0.0352
	-0.82	-0.76	-0.84	-0.77
$Nasdaq_{it}$	-0.0035	-0.0039	-0.0029	-0.0036
	-0.35	-0.39	-0.29	-0.36
Inverse Mills ratio$_{it}$	-0.0017	-0.0013	-0.0008	-0.0016
	-0.10	-0.07	-0.05	-0.09
Intercept	-0.0171	-0.0132	-0.0145	-0.0085
	-0.25	-0.19	-0.21	-0.12
Year effect	Yes	Yes	Yes	Yes
Industry effect	Yes	Yes	Yes	Yes

N	1,746	1,746	1,746	1,746
Adjusted R^2	89.4%	89.4%	89.4%	89.3%

Note: This table reports the regression results based on a Heckman (1979) selection model and regressing the dependent variable $SEO\ Underpricing_{it}$ on the KLD CSR and KLD concerns scores from 1992 to 2012. The variable $SEO\ Underpricing_{it}$ is the closing market price on the offer day minus the offer price, divided by the offer price for firm *i*. ***, **, and * indicate significance at the 1%, 5%, and 10% levels based on *t*-statistics, respectively.

Table 13

Instrument Variable Regressions of CARs (-1, 1) on CSR Scores

	First Stage		*Second Stage*	
Dependent Variable	***CSR$_{it}$***	***Concern$_{it}$***	***SEOCAR$_{it}$***	***SEOCAR$_{it}$***
Instrument_CSR$_{it}$			0.0018***	
			2.67	
Instrument_Concern$_{it}$				-0.0029***
				-3.25
State_CSR$_{it}$	0.5027***			
	13.00			
Industry_CSR$_{it}$	0.6943***			
	19.39			
State_Concern$_{it}$		0.5167***		
		13.84		
Industry_Concern$_{it}$		0.6378***		
		17.12		
Roa$_{it}$	-0.9026	0.2893		
	-1.52	0.61		
Size$_{it-1}$	0.0554	0.2933***	-0.0008	0.00145
	0.91	5.81	-0.62	1.00
Leverage$_{it-1}$	-0.5451*	-0.3400	0.0029	-0.0003
	-1.71	-1.33	0.42	-0.05
Mtb$_{it-1}$	0.0018	0.0062	-0.0002**	-0.0002*
	0.36	1.50	-2.11	-1.80
Relative_offer$_{it}$	-0.1493	0.3333	-0.0207*	-0.0193*
	-0.29	0.82	-1.89	-1.77
Secondary_shares$_{it}$	0.1215	-0.1722	-0.0152***	-0.0167***
	0.61	-1.07	-3.62	-3.98
Underwriter_ranking$_{it-1}$	0.2989*	-0.2901**	0.0087**	0.008**
	1.67	-2.02	2.24	2.15
Nasdaq$_{it}$	0.3421*	-0.1220	0.0010	0.0013
	1.66	-0.74	0.22	0.29
Mktrunup$_{it}$	-1.2965	-0.8665	0.0499*	0.0504*
	-1.07	-0.89	1.90	1.93
Runup$_{it}$	0.0269	-0.4495*	-0.0633***	-0.0651***
	0.08	-1.68	-8.80	-9.03
Intercept	-1.638	-5.5813***	0.0743**	0.0339
	-1.07	-4.48	2.25	0.98
Year effect	Yes	Yes	Yes	Yes
Industry effect	Yes	Yes	Yes	Yes
N	934	934	934	934
Adjusted R^2	70.2%	71.9%	14.6%	14.8%

Note: This table reports the results from instrument variable regressions of the dependent variable *SEOCAR$_{it}$* on KLD CSR and KLD concerns scores from 1992 to 2012. We use several instrument variables to resolve a potential endogenous problem: *State_CSR$_{it}$* is the average annual *CSR$_{it}$* score for firms located in the same state, *Industry_CSR$_{it}$* represents the average annual *CSR$_{it}$* score for firms with the same two-digit SIC code, *State_Concern$_{it}$* is the average annual *Concern$_{it}$* score for firms located in

the same state, and $Industry\_Concern_{it}$ represents the average annual $Concern_{it}$ score for firms with the same two-digit SIC code. The dependent variable, $SEOCAR_{it}$, is the cumulative abnormal stock return in the three-day window (-1, 0, 1) around the SEO announcement for firm *i* in year *t* based on the OLS market model with the estimation window of (-260, -11). The other variables are defined as in the Appendix. ***, **, and * indicate significance at the 1%, 5%, and 10% levels based on t-statistics, respectively.

Table 14
Instrument Variable Regressions of SEO Underpricing on the CSR Scores

	First Stage		*Second Stage*	
Dependent Variable	CSR_{it} **(1)**	$Concern_{it}$ **(2)**	*SEO* $Underpricing_{it}$ **(3)**	*SEO* $Underpricing_{it}$ **(4)**
$Instrument\_CSR_{it}$			-0.0027*	
			-1.68	
$Instrument\_Concern_{it}$				0.0023
				1.03
$State\_CSR_{it}$	0.6545***			
	20.65			
$Industry\_CSR_{it}$	0.7310***			
	24.08			
$State\_Concern_{it}$		0.5712***		
		16.93		
$Industry\_Concern_{it}$		0.6978***		
		21.24		
$Instrument\_CSR_{it} \times InfoAsm_{it}$			-0.0089*	
			-1.69	
$Instrument\_Concern_{it} \times InfoAsm_{it}$				0.0024
				0.68
Roa_{it}	0.7462	-0.8966**		
	1.62	-2.26		
$leverage_{it}$	-0.8438**	0.2647		
	-2.56	0.93		
$PreCAR_{it}$	-0.0742	0.1437	0.9915***	0.9915***
	-0.52	1.16	114.05	113.89
$Lnage_{it}$	0.2059***	-0.0398	0.0191***	0.0177***
	2.83	-0.64	4.22	3.93
$Relative\_offer_{it}$	1.5147**	3.1236***	-0.0175	-0.0311
	1.98	4.73	-0.37	-0.64
$Relative\_offer_{it} \times D_{LowMV}$	-1.5433**	-3.4571***	-0.0066	0.0081
	-2.09	-5.42	-0.14	0.17
$Relative\_offer_{it} \times D_{\text{HighRisk}}$	-1.0321*	-0.3721	-0.0372	-0.0336
	-1.45	-0.61	-0.78	-0.71
$Relative\_offer_{it} \times D_{\text{LowPrice}}$	-0.4711	-2.8080***	0.0271	0.0396
	-0.42	-2.91	0.40	0.58
$Volatility_{it}$	-0.0049	0.0656	-0.0086**	-0.0093**
	-0.07	1.11	-2.05	-2.20
$Lnprice_{it}$	0.0231	0.0559	-0.0025	-0.0028
	0.17	0.48	-0.30	-0.34
$Tick_{it}$	-0.0005	-0.0161	-0.0032	-0.0028
	-0.00	-0.14	-0.39	-0.33

$Lnprice_{it} \times Tick_{it}$	-0.1974	0.3495**	-0.0302**	-0.0301**
	-1.00	2.06	-2.52	-2.51
$IPO\_underpricing_{it}$	0.1738	0.8619	-0.0348	-0.0367
	0.23	1.33	-0.76	-0.80
$Nasdaq_{it}$	-0.0469	-0.5660***	-0.0021	-0.0016
	-0.29	-4.09	-0.21	-0.16
Intercept	-0.9488	0.0292	-0.0162	-0.0149
	-0.98	0.04	-0.26	-0.24
Year effect	Yes	Yes	Yes	Yes
Industry effect	Yes	Yes	Yes	Yes
N	1,746	1,746	1,746	1,746
Adjusted R^2	59.7%	57.4%	89.4%	89.4%

Note: This table reports the results from the instrument variable regressions of the dependent variable $SEO\ Underpricing_{it}$ on the KLD CSR and KLD concerns scores from 1992 to 2012. We use several instrument variables to resolve a potential endogenous problem: $State\_CSR_{it}$ is the average annual CSR_{it} score for firms located in the same state, $Industry\_CSR_{it}$ represents the average annual CSR_{it} score for firms with the same two-digit SIC code, $State\_Concern_{it}$ is the average annual $Concern_{it}$ score for firms located in the same state, and $Industry\_Concern_{it}$ represents the average annual $Concern_{it}$ score for firms with the same two-digit SIC code. The dependent variable, $SEOCAR_{it}$, is the cumulative abnormal stock return in the three-day window (-1, 0, 1) around the SEO announcement for firm *i* in year *t* based on the OLS market model with the estimation window of (-260, -11). The other variables are defined as in the Appendix. ***, **, and * indicate significance at the 1%, 5%, and 10% levels based on *t*-statistics, respectively.

Appendix

Variable Definitions

$SEOCAR_{it}$	=	Cumulative abnormal stock return for the time interval (-1, 0, 1) around the SEO announcement for firm *i*.
CSR_{it}	=	Aggregated KLD CSR score for firm *i* in the SEO announcement year, measured as total strengths minus total concerns, based on the social rating categories of KLD ratings data: corporate governance, community activities, diversity, employee relations, the environment, human rights, and product quality and safety (Kim et al. 2012).
$Concern_{it}$	=	Aggregated KLD concern score for firm *i* in the SEO announcement year, measured as the number of total concerns across corporate governance, community activities, diversity, employee relations, the environment, human rights, and product quality and safety KLD scores.
$CGOV_{it}$	=	Aggregated KLD corporate governance score for firm *i* in the SEO announcement year, measured as total corporate governance strengths minus total corporate governance concerns.
COM_{it}	=	Aggregated KLD community score for firm *i* in the SEO announcement year, measured as total community strengths minus total community concerns.
DIV_{it}	=	Aggregated KLD diversity score for firm *i* in the SEO announcement year, measured as total diversity strengths minus total diversity concerns.
EMP_{it}	=	Aggregated KLD employee relation score for firm *i* in the SEO announcement year, measured as total employee relation strengths minus total employee relation concerns.
ENV_{it}	=	Aggregated KLD environment score for firm *i* in the SEO announcement year, measured as total environmental strengths minus total environmental concerns.
HUM_{it}	=	Aggregated KLD human right score for firm *i* in the SEO announcement year, measured as total human right strengths minus total human right concerns.
PRO_{it}	=	Aggregated KLD product score for firm *i* in the SEO announcement year, measured as total product strengths minus

		total product concerns.
$CGOV\_CON_{it}$	=	Aggregated KLD corporate governance concerns score for firm *i* in the SEO announcement year, i.e., the total number of concerns across corporate governance scores.
COM_CON_{it}	=	Aggregated KLD community concerns score for firm *i* in the SEO announcement year, i.e., the total number of concerns across community scores.
DIV_CON_{it}	=	Aggregated KLD diversity concerns score for firm *i* in the SEO announcement year, i.e., the total number of concerns across diversity scores.
EMP_CON_{it}	=	Aggregated KLD employee relation concerns score for firm *i* in the SEO announcement year, i.e., the total number of concerns across employee relation scores.
ENV_CON_{it}	=	Aggregated KLD environment concerns score for firm *i* in the SEO announcement year, i.e., the total number of concerns across environment scores.
HUM_CON_{it}	=	Aggregated KLD human right concerns score for firm *i* in the SEO announcement year, i.e., the total number of concerns across human right scores.
PRO_CON_{it}	=	Aggregated KLD product concerns score for firm *i* in the SEO announcement year, i.e., the total number of concerns across product scores.
$Size_{it-1}$	=	Natural logarithm of the book value of total assets for firm *i* in the year prior to the SEO announcement.
$Leverage_{it-1}$	=	Ratio of the book value of long-term debt to the book value of total assets for firm *i* in the year prior to the SEO announcement.
Mtb_{it-1}	=	Market value of equity divided by the book value of equity for firm *i* in the year prior to the SEO announcement.
$Relative\_offer_{it}$	=	Number of shares offered divided by total shares outstanding for firm *i* in the year prior to the SEO announcement.
$Secondary\_Shares_{it}$	=	Percentage of SEO shares being sold by existing shareholders to total SEO shares offered for firm *i* in the SEO announcement year.
$Underwriter\_Ranking_{it-1}$	=	Carter–Manaster underwriter reputation measure for firm *i* in the year prior to the SEO announcement, taken from Jay Ritter's

		website at https://site.warrington.ufl.edu/ritter/files/2016/06/Underwriter-Rank-1980-2015.xls.
$Nasdaq_{it}$	=	Indicator variable that takes the value of 1 for NASDAQ-listed firms and 0 otherwise for firm *i* in the SEO announcement year.
$Mktrunup_{it}$	=	Market returns over the 60 trading days prior to the SEO announcement for firm *i*.
$Runup_{it}$	=	Individual stock returns over the 60 trading days prior to the SEO announcement for firm *i*.
$SEO\ Underpricing_{it}$	=	The closing market price on the offer day minus the offer price, divided by the offer price for firm *i*.
$InfoAsm_{it}$		Standard deviation of the market model residuals using daily returns from the previous year for firm *i*.
$PreCAR_{it}$	=	Cumulative market-adjusted return over the period starting the day after the filing date and ending the day prior to the offer, where market return is defined as the return on the CRSP value-weighted index.
$Volatility_{it}$	=	Standard deviation of daily stock returns over the 30 trading days ending 11 days prior to the offer for firm *i*.
$Lnprice_{it}$	=	Natural logarithm of the closing price on the day prior to the offer for firm *i*.
D_{LowMV}	=	One if the firm is in the lowest quartile of market capitalization and zero otherwise.
$D_{HighRisk}$	=	One if the firm is in the highest quartile of volatility.
$D_{LowPrice}$	=	One if the firm is in the lowest quartile of the closing price on the day prior to the offer.
$Tick_{it}$	=	A dummy variable set to one if the decimal portion of the closing price on the day prior to the offer is less than \$0.25 for firm *i*.
$IPO\_\ underpricing_{it}$	=	The average underpricing across all IPOs during the same month as the SEO, where monthly underpricing estimates for IPOs are obtained from Jay Ritter's webpage at https://site.warrington.ufl.edu/ritter/ipo-data/.
$High\_Neg\_CSR_{it}$	=	A dummy variable that equals 1 if *Concerns Score* ≥ 4 for firm *i* in the SEO announcement year and 0 otherwise.

$Blue_{it}$	=	An indicator variable that equals 1 if a firm's headquarters are located in a blue, or Democratic-leaning, state and 0 otherwise in the SEO announcement year. A state is considered a blue state based on the results of the 2000, 2004, 2008, and 2012 presidential elections. The list of blue states is obtained from http://en.wikipedia.org/wiki/Red_states_and_blue_states.
Roa_{it}	=	Return on assets for firm *i* in the SEO announcement year, measured as operating income scaled by total assets.
$Institutional\_Holdings_{it}$	=	Total common shares held by institutional investors divided by the total common shares outstanding for firm *i* at the end of the SEO announcement year.
$Turnover_{it}$	=	The trading volume over shares outstanding for firm *i* at the end of the SEO announcement year.
$Lnage_{it}$	=	Natural logarithm of the number of years of the firm has been listed in the CRSP database for firm *i* in the SEO announcement year.
Vol_{it}	=	Standard deviation of daily stock returns for firm *i* in the SEO announcement year.
$State\_CSR_{it}$	=	The average of annual CSR_{it} scores located in the same state.
$Industry\_CSR_{it}$	=	The average of annual CSR_{it} scores in the same two-digit SIC codes.